

What is claimed is:

1. An active matrix liquid crystal display device configured to invert a polarity of a voltage on a common electrode by row or by frame, comprising:

5       a common voltage supply circuit provided to supply a common voltage VCOM10 to said common electrode; and

      a charge collection and resupply circuit connected between said common electrode and said common voltage supply circuit, said charge collection and resupply circuit

10       including:

      a first switch connected between said common electrode and said common voltage supply circuit;

      a charge collection capacitor;

      a second switch connected between a connection point  
15       of said common electrode and said first switch and said charge collection capacitor;

      a switch control unit provided to control turning on and off of said first and second switches, said switch control unit being configured to operate such that  
20       immediately before a polarity of said common voltage VCOM10 is inverted, said first switch is turned off and then said second switch is turned on, and further, after inversion of said polarity of said common voltage VCOM10, said second switch is turned off and then said first switch is turned on.

25       2. An active matrix liquid crystal display device configured to invert a polarity of a voltage on a common electrode by row or by frame, comprising:

      a common voltage supply circuit provided to supply a

common voltage VCOM10 to said common electrode; and

a charge collection and resupply circuit connected between said common electrode and said common voltage supply circuit, said charge collection and resupply circuit

5 including:

a first switch connected between said common electrode and said common voltage supply circuit;

a positive charge collection capacitor;

a negative charge collection capacitor;

10 a second switch connected between a connection point of said common electrode and said first switch and said positive charge collection capacitor;

a third switch connected between said connection point and ground;

15 a fourth switch connected between said connection point and said negative charge collection capacitor; and

a switch control unit provided to control turning on and off of said first through fourth switches, said switch control unit being configured to operate such that

20 immediately before a polarity of said common voltage VCOM10 is inverted from a positive polarity to a negative polarity, said first switch is turned off and then said second switch is turned on and held in an on-state during a specific period of time and then said polarity is inverted while said  
25 third switch is being in an on-state during a specific period of time, and subsequently, after said fourth switch is being in an on-state during a specific period of time, said first switch is turned on, and immediately before said

common voltage VCOM10 is inverted from a negative polarity to a positive polarity, said first switch is turned off and then said fourth switch is turned on and held in an on-state during a specific period of time, and then, said polarity is  
5 inverted while said third switch is being in an on-state during a specific period of time, and thereafter, said second switch is turned on and held in an on-state during a specific period of time and then said first switch is turned on.

10           3. The liquid crystal display device according to claim 1, further comprising a DC level shift circuit provided to invert a polarity of a common voltage and disposed in a stage prior to said charge collection and resupply circuit.

15           4. The liquid crystal display device according to claim 2, further comprising a DC level shift circuit provided to invert a polarity of a common voltage and disposed in a stage prior to said charge collection and resupply circuit.

20           5. The liquid crystal display device according to claim 1, further comprising a DC level shift circuit provided to invert a polarity of a common voltage and disposed in a stage subsequent to said charge collection and resupply circuit.

25           6. The liquid crystal display device according to claim 2, further comprising a DC level shift circuit provided to invert a polarity of a common voltage and disposed in a stage subsequent to said charge collection and

resupply circuit.

7. The liquid crystal display device according to claim 5, wherein said DC level shift circuit includes:

a coupling and DC blocking capacitor connected between  
5 said charge collection and resupply circuit and said common electrode;

a first bias voltage generation resistor connected between said common electrode and a first power supply; and

a second bias voltage generation resistor connected  
10 between said common electrode and a second power supply.

8. The liquid crystal display device according to claim 6, wherein said DC level shift circuit includes:

a coupling and DC blocking capacitor connected between  
said charge collection and resupply circuit and said common  
15 electrode;

a first bias voltage generation resistor connected between said common electrode and a first power supply; and

a second bias voltage generation resistor connected between said common electrode and a second power supply.